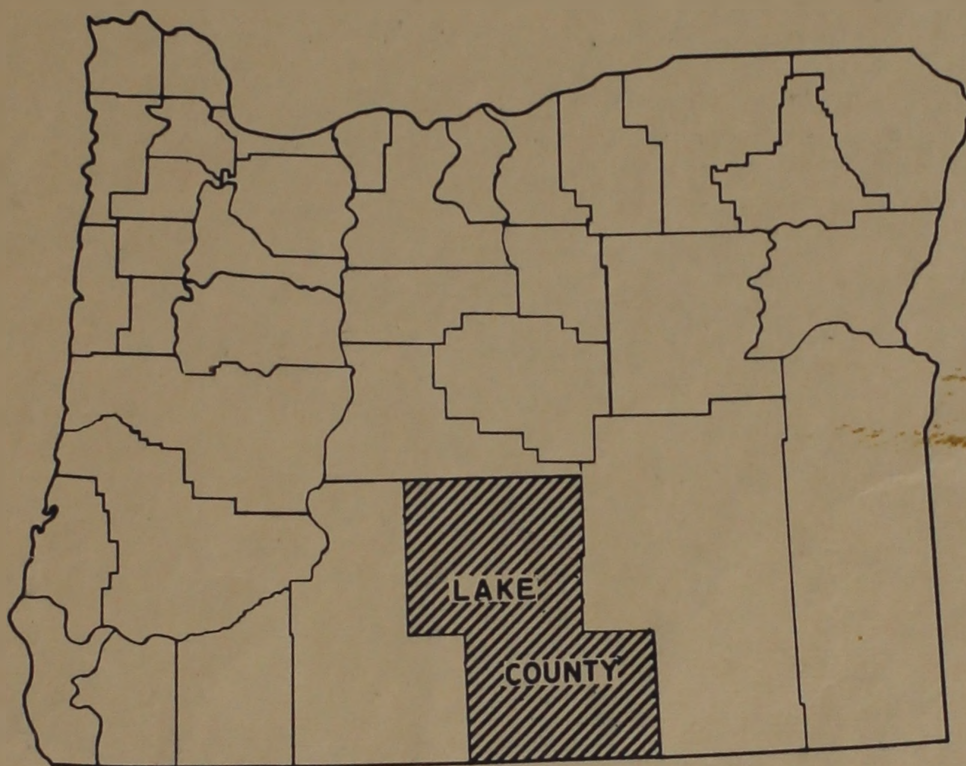


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FOREST STATISTICS FOR LAKE COUNTY, OREGON

FOREST SURVEY REPORT NO. 102
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U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

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DIVISION OF FOREST ECONOMICS

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FOREST STATISTICS
FOR
LAKE COUNTY, OREGON

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May 1950

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FOREWORD

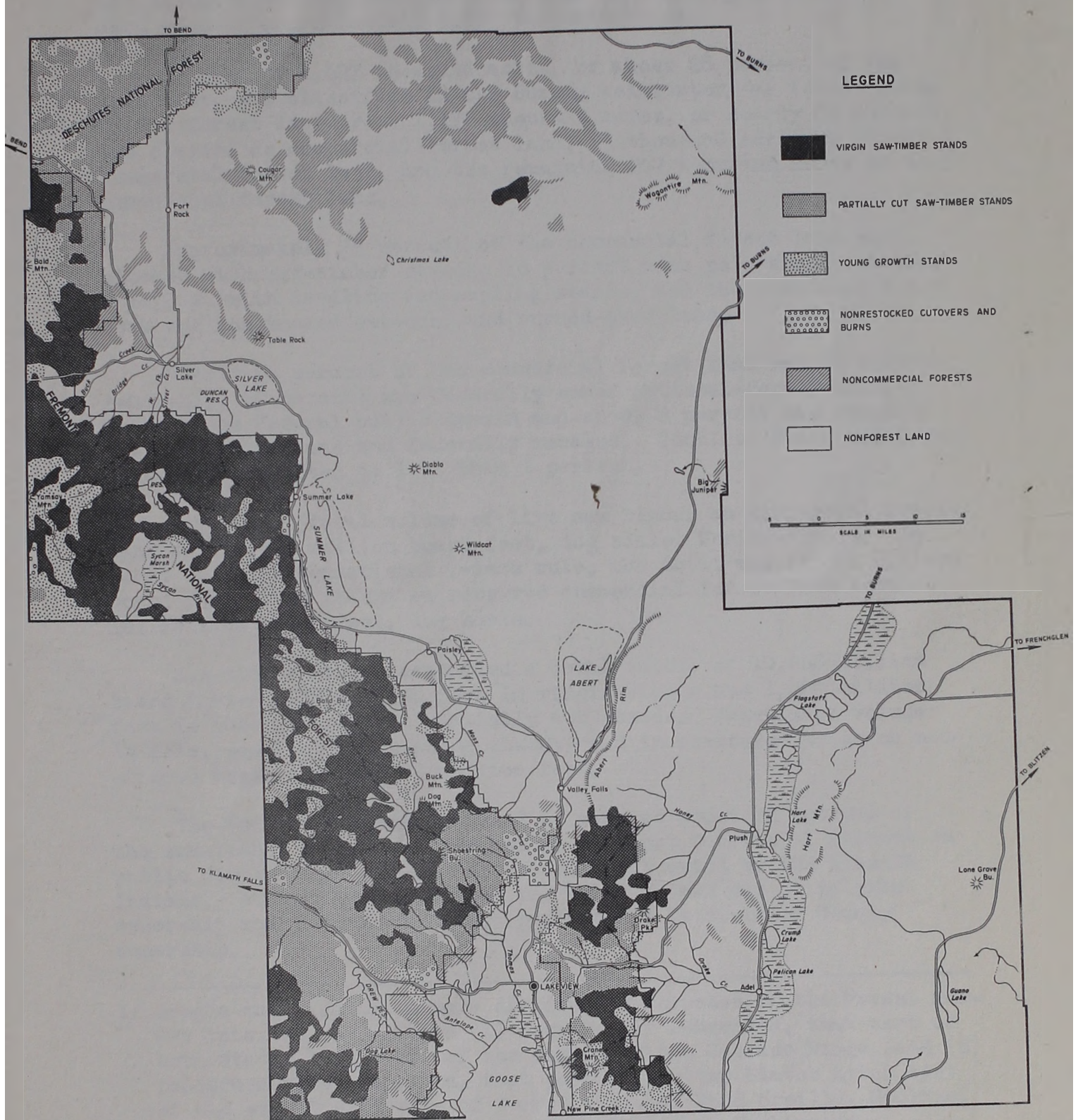
The Forest Survey is a Nation-wide activity of the Forest Service authorized by the McSweeney-McNary Forest Research Act of 1928. The fivefold purpose of the Forest Survey is: (1) To make an inventory of the extent and condition of forest lands and of the present supply of timber and other forest products on these lands; (2) to ascertain the rate at which this supply is being increased through growth, and the potential growth on forest areas; (3) to determine the extent of depletion of the forests through cutting and through loss from fire, insects, disease, windthrow, and other causes; (4) to determine the present consumption and the probable future trend in requirements for timber and other forest products; and (5) to analyze and correlate these findings with other economic data, as an aid in the formulation of private and public policies for most effective and rational use of land suitable for forest production.

The Forest Survey is conducted in the various forest regions of the Nation by the regional forest experiment stations of the Forest Service. In the Pacific Northwest region of Oregon and Washington it is conducted by the Pacific Northwest Forest and Range Experiment Station at Portland, Oregon. Initial forest inventories of each forested county in the region were made during the period 1930 and 1936 and results of them were released in statistical and analytical publications and in forest type maps. In 1937 the work of keeping the Survey statistics and maps up-to-date began through county reinventories.

The forests of Lake County, Oregon were first inventoried in 1934 and 1935 and results were released in a report, "Forest Statistics for Lake County, Oregon", and through a county forest type map on a scale of 1 inch equals 1 mile. The reinventory was conducted in 1947 during the months of May to November. This publication presents statistics resulting from this reinventory. Prints of a revised forest type map of the county are available at cost of printing.

GENERALIZED FOREST TYPES in LAKE COUNTY, OREGON

1947



Survey Findings in Brief

Forest Area. Lake County, situated in the south-central portion of Oregon and a part of the ponderosa pine subregion 1/, has a total land area of approximately 5,293 thousand acres.

A total of 1,457 thousand acres, or about 28 percent of the land area, was classified in the Survey reinventory as forest land. Of the forest land area, 1,177 thousand acres, or nearly 82 percent, was classed as commercial forest land, 13 thousand acres as reserved commercial forest land, and the remaining 267 thousand acres as non-commercial forest land.

Approximately 75 percent of the commercial forest land was stocked with saw-timber stands, 16 percent with pole-timber stands, 7 percent with seedling and sapling stands, and the remaining 2 percent was nonstocked cut-over and burned-over land.

Nearly 28 percent of the commercial forest land was in private ownership, 69 percent was federally owned national-forest land, 1 percent was Federal public domain and about 2 percent was owned by the Klamath Indians and federally managed. Combined State and County ownerships amounted to less than 1 percent.

Timber Volume. Total volume of live saw timber on commercial forest land was 10,531 million board feet, log scale, Scribner rule. In terms of the International $\frac{1}{4}$ -inch rule, the total was 11,584 million board feet. The volume on reserved commercial forest land totaled 107 million board feet, log scale.

Saw-timber stands contained a total volume of 10,048 million board feet--8,558 million feet in virgin stands and 1,490 million feet in reserve trees in partially cut stands. Saw-timber volume in pole, seedling and sapling stands, and in scattered trees on non-stocked areas totaled 483 million feet.

The Federal Government owned or managed about 72 percent of the saw-timber volume--69 percent in national forests, 1 percent on public domain lands, and 2 percent on lands owned by the Klamath Indians. About 27.5 percent of the total volume was in private ownership and the remaining 0.5 percent was in State or County ownership.

1/ Oregon and Washington were divided for purposes of the Forest Survey into two subregions: (1) Douglas-fir subregion, that part of both States lying west of the summit of the Cascade Range, and (2) ponderosa pine subregion, that part of the two States lying east of the summit exclusive of Ferry, Lincoln, Pend Oreille, Spokane, Stevens, and Whitman Counties in northeastern Washington.

Ponderosa pine comprised 80 percent of the saw-timber volume, white fir 13 percent, lodgepole pine 5 percent; the remaining 2 percent was comprised of western white pine, sugar pine, California incense-cedar, mountain hemlock, black cottonwood, and quaking aspen.

Considering all trees 5.0 inches diameter breast height and larger, and expressed in cubic measure, the total volume in live saw-timber and pole-timber trees was 2,185 million cubic feet.

Sound volume in live cull saw-timber trees was estimated to be 36 million cubic feet; in salvable dead trees sound volume was estimated at 33 million feet.

Table 1.--Land area by major classes of forest land

Class of land	Land area
	<u>Thousand acres</u>
Forest land	
Commercial	1,177
Noncommercial	265
Reserved	
Commercial	13
Noncommercial	2
Total forest land	<u>1,457</u>
Nonforest land	<u>3,836</u>
Total land	<u>5,293</u>

Table 2.--Commercial forest land by ownership class by stand-size class

Ownership class	Total	Saw- timber stands	Pole- timber stands	Seedling and sapling stands	Nonstocked areas
	Thousand <u>acres</u>	Thousand <u>acres</u>	Thousand <u>acres</u>	Thousand <u>acres</u>	Thousand <u>acres</u>
Federally owned or managed					
National forest	815	616	137	46	16
Indian	21	15	6	<u>1/</u>	
Other	13	7	1	5	<u>1/</u>
Total Federal	849	638	144	51	16
State	1	1			
County	3	2		1	
Private	324	239	47	30	8
Total all ownerships	1,177	880	191	82	24

1/ Less than 500 acres.

Table 3.--Volume of live saw timber and primary growing stock
on commercial forest land by stand-size class

Stand-size class	Volume		Primary
	Live saw timber		growing stock
	<u>Million bd.ft.</u> <u>log scale</u> <u>Scribner rule</u>	<u>Million bd.ft.</u> <u>International</u> <u>$\frac{1}{4}$-inch rule</u>	<u>Million cu.ft.</u>
Saw-timber stands			
Virgin	8,558	9,414	1,574
Partially cut	1,490	1,639	427
Total saw-timber stands	10,048	11,053	2,001
Pole-timber stands	350	385	133
Seedling and sapling stands	127	139	49
Nonstocked areas	6	7	2
Total all stands	10,531	11,584	2,185

Table 4.--Volume of live saw timber and primary growing stock on
commercial forest land by ownership class

Ownership class	Volume		Primary growing stock
	Live saw timber		
	<u>Million bd.ft. log scale, Scribner rule</u>	<u>Million bd.ft. International $\frac{1}{4}$-inch rule</u>	<u>Million cubic feet</u>
Federally owned or managed			
National forest	7,296	8,026	1,517
Indian	213	234	42
Other	89	98	19
Total Federally owned or managed	7,598	8,358	1,578
State	7	8	2
County	15	16	3
Private	2,911	3,202	602
Total all ownership classes	10,531	11,584	2,185

Table 5.--Volume of live saw timber and primary growing stock
on commercial forest land by species

Species	Volume		Primary growing stock Million cu.ft.
	Live saw timber		
	Million bd.ft. <u>log scale</u> <u>Scribner rule</u>	Million bd.ft. <u>International</u> <u>4-inch rule</u>	
Softwoods			
Ponderosa pine	8,471	9,318	1,425
Lodgepole pine	554	609	275
White fir	1,320	1,452	431
Other <u>1/</u>	186	205	54
Total softwoods	10,531	11,584	2,185
Hardwoods <u>2/</u>			
Total all species	10,531	11,584	2,185

1/ Includes sugar pine, western white pine, California incense-cedar, and mountain hemlock.

2/ There is a small volume of quaking aspen but totaling less than 500 thousand board feet or 500 thousand cubic feet.

Table 6.--All-timber volume on commercial forest
land by kind of material

Kind of material	Volume <u>Million cubic feet</u>
Live all timber	
Primary growing stock	2,185
Secondary growing stock	36
Total	2,221
Salvable dead all timber	33
Total all timber	2,254

Table 7.--Average annual commodity production by timber products
in cubic volume and in standard units, 1938-1947

Timber products class	Cubic volume Thousand cubic feet	Quantity	
		Standard units	
		Unit	Number
Sawlogs (for lumber)	29,843	M bd.ft., Scribner rule	159,000
		M bd.ft., Intern'l $\frac{1}{4}$ " rule	175,000
Fuelwood	518	Standard cords	5,520
Poles	11	Pieces	1,000
Posts (round and split)	140	Pieces	140,000
Total all products	30,512		

Table 8.--Area of commercial and noncommercial forest land and nonforest land in Lake County, Oregon, by ownership and cover type, as of November 30, 1947

(Acres)

Survey type number	Cover type	Total	Unreserved								Reserved ^{1/}				
			Total	Private	State	County	Indian	Federal			Total	State	Municipal	Fremont national forest	
								Public domain	Deschutes national forest	Fremont national forest					
All lands															
	Forest land	1,457,245	1,441,875	373,305	6,365	5,495	20,620	193,450	167,350	675,290	15,370	240	130	15,000	
	Nonforest land	3,835,555	3,834,985	--3,689,035 acres unclassified as to ownership--						4,590	141,400	570			570
	Total	5,292,800 ^{2/}	5,276,860						171,940	816,690	15,940	240	130		15,570
Commercial forest land															
5 ^{1/2}	Woodland: scattered ponderosa pine - 12" + d.b.h.	35,090	35,050	9,965	200	120	120	2,295	280	22,070	40	40			
	Ponderosa pine: 50% or more ponderosa pine						430	40		61,150	3,190	120	40		3,030
20	Large, 50 to 80% pine, 22" + d.b.h.	84,400	81,210	19,590											
20.5	Pure, large, more than 80% pine, 22" + d.b.h.	576,160	576,160	142,185	200	400	13,160	4,005	89,330	326,880					
21	Small, 12 to 20" d.b.h.	103,910	103,910	33,425	360	840		1,035	30,360	37,890					
22	Seedlings and saplings, less than 12" d.b.h.	80,610	80,530	35,140	80	760	360	5,360	13,520	25,310	80	80			
	Sugar pine: 20% or more sugar pine, and less than 50% ponderosa pine						480			440					
20A	Large, 22" + d.b.h.	2,720	2,720	1,800											
	Ponderosa pine mixture: 20 to 50% ponderosa pine				80	80				15,620					
27	Large, 22" + d.b.h.	25,410	25,410	9,630						1,880	90		90		
28A	Large second growth, 12 to 20" d.b.h.	5,290	5,200	3,240											
28B	Small second growth, less than 12" d.b.h.	7,830	7,830	4,320				160		3,350					
	Balsam fir-mountain hemlock: 50% or more of mountain hemlock and white fir						280			3,000					
23	Large, 12" + d.b.h.	3,280	3,280							200					
24	Small, less than 12" d.b.h.	200	200												
	Upper-slope mixture: mixture of mountain hemlock, lodgepole pine, white fir, and white pine						450			3,940					
27 ^{1/2}	Large, 12" + d.b.h.	5,070	5,070	680											
	White fir: 50% or more white fir					120	40	240		19,950	2,930				2,930
29	Large, 12" + d.b.h.	41,460	38,530	18,180						2,370					
30	Small, less than 12" d.b.h.	3,560	3,560	950		240									
	Lodgepole pine: 50% or more lodgepole pine			40					280	2,430					
25	Large, 12" + d.b.h.	2,750	2,750												
26	Medium, 6 to 10" d.b.h.	168,760	162,700	33,630		5,300			26,270	97,500	6,060				6,060
26A	Small, less than 6" d.b.h.	8,400	7,440	640					3,120	3,680	960				960
	Hardwoods: 50% or more of quaking aspen									120					
31.5	Large, 12" + d.b.h.	560	560	440											
31	Small, less than 12" d.b.h.	10,730	10,650	2,530				20		8,100	80				80
35	Nonrestocked outcrop: logged area not stocked and with reserve stand less than 2 M per acre	4,880	4,880	3,520					440	920					
37	Deforested area: nonrestocked area deforested otherwise than by cutting--fire or insect	19,310	19,310	4,480	160			360	3,750	10,560					
	Total	1,190,380	1,176,950	324,385	1,080	2,640	20,620	13,515	167,350	647,360	13,430	240	130		13,060
Noncommercial forest land															
5	Juniper woodland: more than 5% of area covered with Sierra juniper	246,385	246,385	48,225	4,840	2,815		166,605		23,900					
33	Subalpine: forest at upper limits of tree growth	5,370	3,430	360		40				3,070	1,940				1,940
38	Noncommercial rocky: area below subalpine type too rocky or sterile to produce commercial forest	15,110	15,110	335	445			13,330		1,000					
	Total	266,865	264,925	48,920	5,285	2,855		179,935		27,970	1,940				1,940

^{1/} Cutting for commodity production prohibited or limited by regulation or legislation.

^{2/} The total land area of the county, according to the Bureau of the Census - 1945, is 5,292,800 acres. Of this, 1,603,805 acres--including all forest land in the county and all nonforest land in national-forest ownership--was classified as to ownership by Forest Survey.

Table 10.--Average net volume and number of trees per acre in
virgin saw-timber stands and
partially cut saw-timber stands

Stand	Average net volume per acre		Average number per acre		
	All species	Ponderosa pine	Saw-timber trees	Pole-tim- ber trees	Live cull trees
	<u>Board feet, log scale</u> <u>Scribner rule</u>				
Virgin saw timber	15,790	13,870	31.4	47.1	1.0
Partially cut saw timber	4,920	2,460	21.9	49.2	1.1

Forest Survey Procedure

Initial Inventory. The initial inventory of Lake County, started in the fall of 1934 and completed during the first half of 1935, was made by the "compilation method." Briefly, in this method all existing forest-type, timber-volume, and other pertinent data were collected, checked in the field for reliability, and brought up to date and to a common standard set by the Survey. Forest-type and timber-volume data for areas not covered by existing information were obtained through field reconnaissance.

All land in the county was classified as either forest or nonforest. Forest land was further classified as commercial or noncommercial; the commercial forest land by type, stand-size class, and in case of young growth by stocking class. All such types and classes were delineated on 1-inch-to-the-mile base maps of each forested township. These township type maps were then superimposed over ownership-status plats and dot counted to obtain forest-type area statistics by ownership class. Type delineations on the township maps were traced to a base map of the county to form a county forest type map. The commercial forest land was also classified as to site quality, or forest-productive capacity.

In-place, timber-volume estimates were based on existing cruises collected and adjusted to the Survey standard, field samples, and ocular estimates. Separate volume estimates were computed for each tree species and for each ownership class.

Reinventory. In the reinventory in 1947 complete revision of the 1-inch-to-the-mile forest type map was obtained through interpretation, classification, and mapping on up-to-date aerial photos covering all but a few thousand acres of the forest land. Types, stand-size classes, and stocking classes were similar to those recognized in the initial inventory. However, the aerial photos facilitated mapping of much greater accuracy and detail than was possible through ground reconnaissance in the initial inventory. Type delineations on the aerial photos were transferred to a 1-inch county base map through use of a photo projector. The new type map was then superimposed over the current ownership-status map and a dot count made of forest type areas by ownership class.

Estimates of the total saw-timber and all-timber volumes in the county were obtained by a sampling procedure in which randomly selected plots were measured in each of four stand-size classes: Virgin saw-timber stands, partially cut saw-timber stands, pole-timber and seedling and sapling stands, and nonstocked areas. Intensity of the sampling was so designed as to produce a total estimate of a desired sampling accuracy. In the random selection of samples each individual volume type in the county had an equal chance of being selected. A sample consisted of a cluster of five one-fifth-acre circular plots spaced at 2-chain intervals

on a selected cardinal bearing. A total of 94 plot clusters or 470 one-fifth-acre plots was taken. The number of plot clusters, in each of the four sampling strata was as follows:

<u>Sampling stratum</u>	<u>Number of sample plot clusters</u>
Virgin saw timber	41
Partially cut saw timber	27
Pole timber, seedlings and saplings	15
Nonstocked areas	11
Total	<u>94</u>

Timber volume in board feet and in cubic feet tallied on the plots by species in each sampling stratum was computed on a per-acre basis and then expanded by the appropriate acreage of the stratum to produce total volume estimates.

Comparison of Inventories

Analysis of results of the initial inventory in 1935 and the reinventory in 1947 provides information on trends in the forest-resource situation in Lake County.

Forest land area in 1935 totaled 1,391 thousand acres in contrast with 1,455 thousand acres in 1947. The bulk of this increase of 64 thousand acres, approximately 4.6 percent, was the result of a difference in classification of Sierra juniper type--a sparsely stocked woodland type of noncommercial character--and in the mapping of more area of fringe stands of aspen. Some difference can be attributed to the greater accuracy in delineation of forest land versus nonforest land on aerial photos in contrast with that by ground reconnaissance.

Commercial forest land area in 1947 was about 33 thousand acres greater than in 1935. This increase of 2.8 percent was probably due to a difference in interpretation and judgment in the classification work.

Area of uncut saw-timber stands was reduced from 877 thousand acres to 547 thousand acres, a difference of 330 thousand acres. A total of 275 thousand acres of this decrease can be accounted for in the increase of partially cut saw-timber stands from 28 thousand in 1935 to 303 thousand in 1947. An additional 44 thousand acres shows up as an increase in area of pole, sapling, and seedling stands on cut-over land. On this acreage cutting left a reserve stand in saw-timber trees too small to qualify as partially cut saw timber.

Remainder of the difference in uncut saw-timber acreage can be attributed to a difference in the two surveys in minimum volume per acre that qualified a stand as saw timber; in 1935 it was 1,000 board feet; in 1947 it was 2,000 board feet.

The area of pole, sapling, and seedling stands on the uncut area increased about 19 percent. The major part of this difference was due to a difference in interpretation and classification, a small part to restocking of burned-over land.

The nonstocked forest land acreage increased from 24 thousand acres in 1935 to 29 thousand acres in 1947. About one-sixth of the 1947 area was cut-over land, the remainder burned-over land.

Saw-timber Volume. A comparison of saw-timber volumes on commercial forest land obtained in the initial inventory with those obtained in the reinventory follows:

Inventory	Saw-timber volume in--				
	All species	Ponderosa pine	White fir	Lodgepole pine	Other species
	Million board feet, log scale, Scribner rule				
Initial inventory, 1935	11,061	9,845	919	167	130
Reinventory, 1947	10,531	8,471	1,320	554	186
Difference in million board feet	- 530	-1,374	+ 401	+ 387	+ 56
Difference in percent	- 5	- 14	+ 44	+ 332	+ 43

The 14-percent decrease in volume of ponderosa pine reflects the fairly heavy cutting of this important commercial species during the 12 years between inventories. The large percentage increase in volume of white fir, lodgepole pine, and "other species" is due in part to very light cutting resulting in an excess of growth over drain, and in part to a difference in utilization standards applicable to them. In 1935 there had been practically no cutting of white fir in this or adjoining counties and all timbermen, cruisers, and foresters considered the species to be highly defective, particularly in case of large, old-growth trees. In cruising allowance for cull was usually quite large. During the war years, however, white fir began to be utilized to a considerable extent in nearby Klamath County, and later to a limited extent in Lake County, and it was found that the principal defect was stump rot that extended only a short distance up the bole. In view of this evidence, the volume of cull allowance in cruising the species was materially reduced in the reinventory in 1947, which resulted in a larger net volume. The volume of lodgepole pine included in the 1935 inventory occurred in occasional trees in mixed stands predominantly

ponderosa pine or in pure stands of lodgepole pine, on limited areas, in which the majority of the trees were of saw-timber size. Lodgepole pine pole-timber stands were classified as non-commercial with no board-foot volume recognized. In the 1947 reinventory all stands of this species were classified as commercial and it was found that the pole-timber stands contained an appreciable volume in occasional saw-timber trees.

Reliability of the Statistics and Forest Type Map

In the classification and mapping of forest land versus non-forest land and the further classification of the forest land by types, stand-size, and stocking class under the Survey procedure employed in Lake County, sources of error may include technique, judgment, faulty computation of data, and projection of mapped detail to an inaccurate base map. As the classification and mapping covered 100 percent of the forest zone there was no sampling error. Errors due to technique, judgment, or computation are difficult to evaluate. Throughout the reinventory efforts were made to maintain a high degree of accuracy and uniformity of standards in the type classification and mapping, volume sampling, and computation of data. The fact that the type classification was based primarily on recent photos of good quality permitted more accurate work.

The estimates of timber volume obtained through the sampling procedure were subject to two sources of error: (1) errors in technique, tree measurements, judgment of cull and breakage, volume tables used, and computation, and (2) sampling errors. The former do not readily lend themselves to evaluation; the latter can be calculated through statistical analysis. Analysis of the variation in the sample plot data obtained indicate that the sampling error, in terms of one standard error, of the total timber volume in the county was ± 7.6 percent. In other words, the probabilities are two out of three that the actual volume if measured by a 100-percent tree cruise would have been within ± 7.6 percent of the estimated volume. In terms of board feet the sampling error is 800 million board feet (7.6 percent of the total volume of 10,531 million board feet, log scale, Scribner rule). Volume estimates by species, stand-size class, or ownership class have a greater sampling error than the total county estimate. Size of the error depends on volume involved; for example, the estimate of 8,558 million board feet in virgin saw-timber stands has an error of about 9 percent whereas the 483 million board feet of saw timber in pole, seedling and sapling stands and on nonstocked areas has an error of about 27 percent.

Explanation of Terms Used

Following are brief definitions of the terms used in this report in alphabetical order:

Area. Forest land. Includes (a) land which is at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or of exerting an influence on the climate or on the water regime; and (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which have not been developed for other use. Minimum area of forest land recognized in Lake County reinventory was 40 acres.

Nonforest land. Land that does not qualify as forest land. Minimum area recognized in Lake County reinventory was 40 acres.

Total land. Includes dry land and unmeandered water surface.

Commercial Forest Land. Forest land which is producing, or is physically capable of producing, usable crops of wood, economically available now or prospectively, and not withdrawn from timber utilization.

Reserved commercial forest land. Forest land managed for purposes other than timber production; the timber is not available for cutting because of statute, proclamation, or policy.

Commodity Production. Total output of timber products in cubic feet and in standard units.

Growing Stock. Net volume, in cubic feet, of saw-timber trees and pole-timber trees from stump to a minimum 4.0-inch top, inside bark.

Primary growing stock. Net volume, in cubic feet, of live saw-timber trees and live pole-timber trees from stump to a minimum 4.0-inch top, inside bark.

Secondary growing stock. Net volume, in cubic feet, of all cull trees from stump to a minimum 4.0-inch top, inside bark.

Log Scale. Unit for measuring in board feet the timber volume of saw-timber stands.

Scribner rule. The common board-foot rule used in determining log scale volume of saw timber in this region.

International $\frac{1}{4}$ -inch rule. The standard board-foot rule adopted by the Forest Service in the presentation of Forest Survey volume statistics. Values of this rule approximate lumber tally.

Salvable Dead. A dead standing saw-timber tree in which at least one-third of the gross board-foot volume is free from rot or defect, and in which sound volume totals at least 30 board feet.

Sampling Error. A measure of the reliability of timber-volume estimates based on the variability shown by sample measurements of the volume.

Saw-timber Tree. A tree 11.0 inches d.b.h. and larger containing at least one merchantable 16-foot log, and in which at least one-third of the board-foot volume is free of rot and defect.

Standard Error. An expression of the probability of timber-volume estimates being within a specified range of limits around the actual timber volume.

Stand-Size Classes.

Virgin saw-timber stand. A stand of saw-timber trees having a minimum net volume per acre of 2,000 board feet, log scale, Scribner rule, in which there had been no cutting drain.

Partially cut saw-timber stand. A stand of saw-timber trees, remaining after partial-cutting operations, having a minimum net volume per acre of 2,000 board feet, log scale, Scribner rule.

Pole-timber stand. A stand failing to meet the saw-timber-stand specifications but of at least 10-percent stocking of trees 5.0 inches d.b.h. and larger, with at least one-half the minimum stocking in pole-timber trees (5.0 to 10.9 inches d.b.h.).

Seedling and sapling stand. A stand not qualifying as either saw-timber or pole-timber stands but having at least 10-percent stocking of trees and with at least one-half the minimum stocking in seedlings and saplings (0 to 4.9 inches d.b.h.).

Nonstocked area. An area of forest land not qualifying as saw-timber, pole-timber or seedling and sapling stands. Less than 10 percent stocked.

Species. Commercial tree species that occur in Lake County include:

Softwoods:

California incense-cedar (Libocedrus decurrens).
Lodgepole pine (Pinus contorta latifolia).
Mountain hemlock (Tsuga mertensiana).
Ponderosa pine (Pinus ponderosa).
Sugar pine (Pinus lambertiana).
Western white pine (Pinus monticola).
White fir (Abies concolor).

Hardwoods:

Black cottonwood (Populus trichocarpa hastata).
Quaking aspen (Populus tremuloides)

Timber Volume.

Board-foot volume. The volume of that portion of saw-timber trees merchantable for sawlogs.

Cubic-foot volume. The volume of that portion of saw-timber and pole-timber trees, 5.0 inches d.b.h. and larger, from stump to a minimum 4.0-inch top inside bark.

Type. Forest. A forest stand characterized by the predominance of certain key species--in terms of cubic volume in case of saw-timber and pole-timber stands, and in number of trees in seedling and sapling stands--or a forest condition such as nonstocked cut-over or burned-over land.